

# The Identity of *Synandropus* and a New Combination in Neotropical Menispermaceae

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**ABSTRACT.** *Synandropus membranaceus* A. C. Sm. (Menispermaceae), known previously only from the type collection, is lectotypified and *Synandropus* A. C. Sm. is reduced to synonymy of *Odontocarya* Miers, within section *Somphoxylon* (Eichler) Barneby. The new combination *O. membranacea* (A. C. Sm.) R. Ortiz is made; *O. uva-alba* Barneby and *O. arifolia* Barneby are reduced to synonymy under *O. membranacea*.

**RESUMEN.** Se lectotipifica *Synandropus membranaceus* A. C. Sm. (Menispermaceae), conocida anteriormente sólo de la colección tipo y se reduce *Synandropus* A. C. Sm. a sinónimo de *Odontocarya* Miers, en la sección *Somphoxylon* (Eichler) Barneby. Se hace la nueva combinación de *O. membranacea* (A. C. Sm.) R. Ortiz; *O. uva-alba* Barneby y *O. arifolia* Barneby son considerados como sinónimos de *O. membranacea*.

**Key words:** Menispermaceae, Neotropics, *Odontocarya*, sect. *Somphoxylon*, *Synandropus*.

The monotypic genus *Synandropus* A. C. Sm. (Menispermaceae) was described from Pará, Brazil. In the protologue, Smith (1931) compared *Synandropus* to *Odontocarya* Miers and *Somphoxylon* Eichler. *Synandropus* was distinguished from *Odontocarya* by its three stamens (vs. six stamens in *Odontocarya*) and its partially fused filaments (vs. fully connate in *Somphoxylon*). Its three petals (vs. six petals) distinguished *Synandropus* from both *Odontocarya* and *Somphoxylon*. Subsequently, Barneby (1970) reduced *Somphoxylon* to a section within *Odontocarya*, but *Synandropus* was maintained.

Among Neotropical Menispermaceae, *Odontocarya* sect. *Somphoxylon* (Eichler) Barneby is distinguished by its racemose, cauliflorous staminate inflorescence with three orders of branching and a 3-merous synandrium. Herein, *Synandropus* is reduced to synonymy of *Odontocarya*, specifically to synonymy of *Odontocarya* sect. *Somphoxylon*. Among the 12 species of *Odontocarya* sect. *Somphoxylon*, the combination of a glabrous inflorescence axis, six

sepals, six fleshy petals, and a 3-merous synandrium is found only in *O. arifolia* Barneby, which in the protologue was reported to occur in Peru and Brazil (Barneby, 1970).

**Odontocarya** sect. **Somphoxylon** (Eichler) Barneby, Mem. New York Bot. Gard. 20(2): 110. 1970. Basionym: *Somphoxylon* Eichler, Flora 47: 396. 1864. TYPE: *Somphoxylon wulschlaegelii* Eichler [= *Odontocarya wulschlaegelii* (Eichler) Barneby].

*Synandropus* A. C. Sm., Bull. Torrey Bot. Club 58: 93. 1931, syn. nov. TYPE: *Synandropus membranaceus* A. C. Sm. [= *Odontocarya membranacea* (A. C. Sm.) R. Ortiz].

**Odontocarya membranacea** (A. C. Sm.) R. Ortiz, comb. nov. Basionym: *Synandropus membranaceus* A. C. Sm., Bull. Torrey Bot. Club 58: 93. 1931. TYPE: Brazil. Pará: Breves, Amazon estuary, swampy jungle, 23 Oct. 1929 (♂ inflor.), E. P. Killip & A. C. Smith 30217 (lectotype, designated here, NY 00320662 [♂ inflor., leafless branch at left]; duplicate, US 0010973 [♂ inflor., leafless branch at left]). Figure 1.

*Odontocarya arifolia* Barneby, Mem. New York Bot. Gard. 20(2): 120. 1970, syn. nov. TYPE: Peru. Loreto: Aguaytía, in forest, 250 m, 20 May 1959 (fr.), F. Woytkowski 5374 (holotype, F 1532620; isotype, MO 1744787).

*Odontocarya uva-alba* Barneby, Mem. New York Bot. Gard. 22(4): 142. 1972, syn. nov. TYPE: Peru. San Martín: in forest thicket, Saposoa, 14 Oct. 1959 (fr.), F. Woytkowski 5519 (lectotype, designated here, MO 3459413 [fruiting branch]; duplicates, MO 2143393 [fruiting branch, leaves excluded], NY not seen). Figure 2.

**Discussion.** The type of *Synandropus membranaceus* A. C. Sm. is a mixed collection comprising material from two plant families. The leafless staminate inflorescence on the left of the NY lectotype (Fig. 1A) correctly belongs to the Menispermaceae, but the remaining leafy stems (Fig. 1B) are clearly allied to the Euphorbiaceae. The



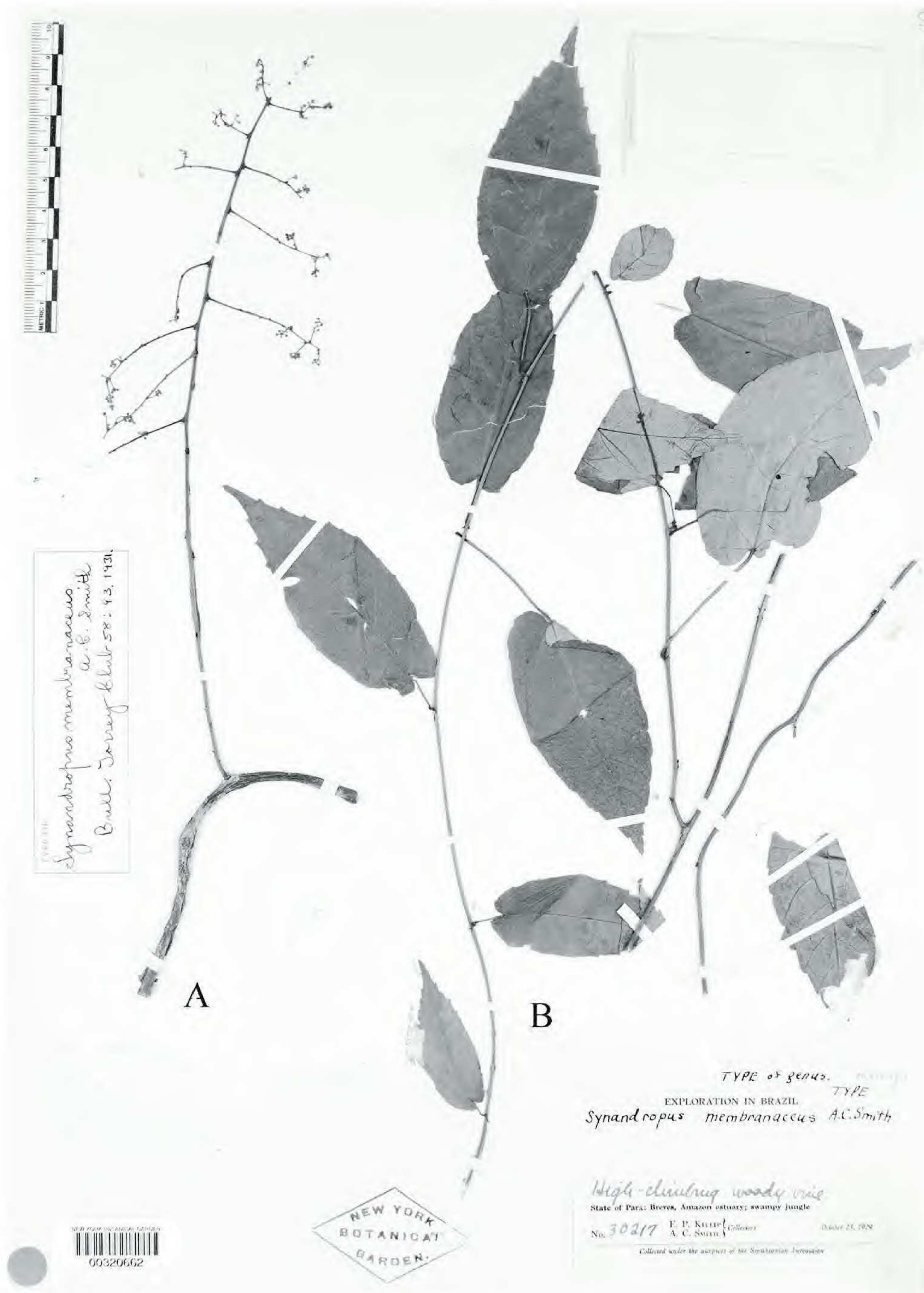


Figure 1. Lectotype of *Synandropus membranaceus* A. C. Sm., E. P. Killip & A. C. Smith 30217 NY 00320662 (♂ inflor., leafless branch at left). —A. Staminate inflorescence of *Odontocarya membranacea* (Menispermaceae). —B. Leafy branch of *Tragia* (Euphorbiaceae).

membranous serrate leaves and paired stipules are characteristic for the genus *Tragia* L. The 3-merous synandrium of *Synandropus* is a character shared with *Somphoxylon*; the latter has been recognized as

a section within *Odontocarya* (Barneby, 1970). Further, the lectotype of *Synandropus membranaceus* corresponds with the protologue of *O. arifolia*, differing only in having three petals. However,



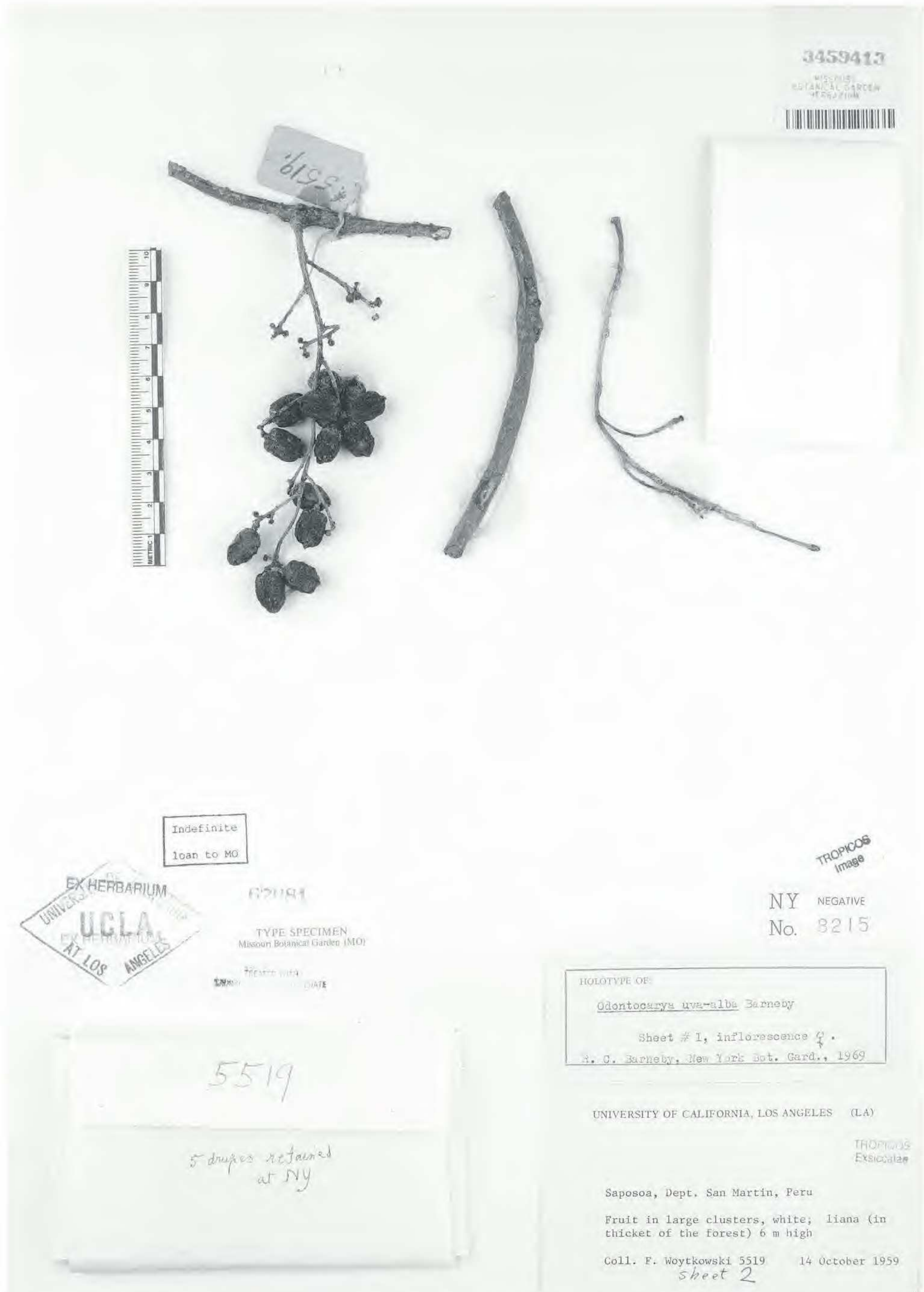


Figure 2. Lectotype of *Odontocarya uva-alba* Barneby, Woytkowski 5519 [fruiting branch] MO 3459413.

variation in the number of petals (from three to six) is occasionally observed in the widespread *O. arifolia*; hence, the two names are considered synonymous, and *Synandropus membranaceus* is transferred to *Odontocarya*.

Another name here considered is *Odontocarya uva-alba* Barneby, described from Peru. The taxon was distinguished by Barneby (1972) from the Amazonian *O. arifolia* by the indument on the abaxial leaf surface as well as by its inter-Andean



geographical distribution. Barneby (1972: 143) designated two sheets (then in LA, since transferred to MO) as the holotype, a third sheet consisting of a fragment, likely of a leaf, and drupe at NY was listed as the isotype. Yet a fourth sheet, MO 2143393, also labeled as an isotype and verified by Barneby, was not listed in the protologue. The part of the holotype, originally labeled as "sheet 2," albeit subsequently called "sheet #1" on Barneby's annotation label, consists solely of fruiting material, and the one originally labeled as "sheet 1" has leaves only. The 2-order branching of the fruiting specimen (Fig. 2) corresponds well with *O. membranacea*. However, the leafy shoot on the sterile sheet of Barneby's holotype and that of the duplicate, MO 2143393, are identified here as *Aristolochia fragrantissima* Ruiz (Aristolochiaceae), and this material is excluded. Thus, the fruiting element of *F. Woytkowski* 5519 is here selected as the lectotype, and the name *O. uva-alba* is treated as a synonym of *O. membranacea*.

New species described from representatives of a single sex in a dioecious family such as the Menispermaceae compound the problem of associating further collections to the type specimen. For instance, although staminate features were described for *Odontocarya arifolia*, Barneby (1970) cited a fruiting specimen as the holotype.

I examined additional staminate collections subsequently determined as *Odontocarya arifolia* and found that these specimens have either a 1-merous or a 3-merous androecium, while the petals vary not only in numbers, as either three or five, but also they vary substantially in the degree of fusion, ranging from free to partially connate or completely connate and forming a tube. Included in my expanded concept of *O. membranacea* in the staminate condition are specimens distinguished by a 3-merous synandrium only, while specimens having a 1-merous androecium are referred to *O. monandra* Barneby, a species known from Loreto, the locality of the type, as well as from the departments of Ucayali and San Martín in Peru.

In the pistillate condition, although initially features of leaves and endocarps were examined, specimens were assigned to *Odontocarya membranacea* based on features of the endocarp as well as geographic proximity to locations where staminate individuals have been collected. Features of the endocarp surface on the type of *O. uva-alba* resemble those of *O. membranacea*, in agreement with Barneby (1970), who compared the endocarp of *O. uva-alba* to those of *O. arifolia*, as encompassed by the current taxonomic concept of *O. membranacea*.

As recognized here, *Odontocarya membranacea* is characterized as a medium-sized subwoody climber found in lowland forests across Bolivia, Brazil, Ecuador, and Peru, at elevations ranging from 130 to 500 m. Distribution in Ecuador is based on reports by Ott (1997). Leaves are ovate, 12.5–19 × 7–13 cm, the base is cordate to truncate, the sinus shallow or deep, 0.9–5 cm deep. Staminate inflorescences have three orders of branching and are glabrous; staminate flowers have six sepals, three, five, or six fleshy petals, and three stamens that are partially to fully connate; flowers were collected from August through November. Pistillate inflorescences and pistillate flowers were not observed; infructescences have two orders of branching, fruits were found in March, May, and from July through November. These fruits are oblongoid, 1.1–1.3 × 0.7–0.9 cm; the endocarp is scarcely ornamented with discontinuous, sinuose low ridges on the abaxial surface that do not form a reticulate pattern, and have an oblongoid adaxial opening ca. (3–)5 × 1 mm that corresponds with the adaxial intrusion (the condyle). The endocarp ornamentation of the type of *O. uva-alba* is similar to that of *O. membranacea*, although the adaxial opening is shorter than in most typical *O. membranacea* (ca. 3 × 1 mm). The character, however, displays ample variation across the range of the species.

*Additional specimens examined.* BOLIVIA. **La Paz:** Franz Tamayo, Madidi, Chalalan, sendero Paraba, (fr.), A. Araujo-M. et al. 1153 (MO); Parque Nac. Madidi, río Hondo, (♂ fl.), A. Fuentes 4326 (MO). ECUADOR. Cited by Ott (1997), but not verified herein. PERU. **Loreto:** Maynas, Rio Yavarí, Puerto Amelia, cerca a Atalaya Pueblo Brasileiro, (♂ fl.), J. Revilla 2153 (MO). **Madre de Dios:** flooded forest near Cocha Cashu Station on an old ox-bow lake of the Rio Manu, (♂ fl.), R. B. Foster 2556 (F), 5919 (F), 7224 (F); vic. Cocha Cashu, Parque Nac., (imm. fr.), R. B. Foster & J. Terborgh 6464 (F); Tambopata, alrededores del albergue turístico Cusco Amazónico, Río Madre de Dios, ca. 35 km de Puerto Maldonado, (fr.), P. Núñez et al. 9958 (MO); primary floodplain plot 5, along Rio La Torre Trail, Explorer's Inn, near confluence of Rio Tambopata and Rio La Torre, 39 km SW of Puerto Maldonado, (♂ buds), S. F. Smith 276 (US).

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